

What is claimed is:

1. A tandem type printer, comprising:

a plurality of scanning optical systems, each of which includes a laser source that emits a laser beam, and a deflector that deflects the laser beam to scan, in a main scanning direction, within a predetermined angular range, said plurality of scanning optical system respectively including a plurality of f θ lenses that converge the laser beams emitted by said plurality of scanning optical systems; and

a plurality of photoconductive drums arranged to receive the laser beams emitted from said plurality of f θ lenses, respectively, the laser beams scanning on said plurality of photoconductive drums, respectively, images formed on said plurality of photoconductive drums being developed and transferred in an overlaid fashion on a sheet,

wherein each of said plurality of f θ lenses includes:

a glass lens that provides substantially all the power, in the main scanning direction, of said each of said plurality of f θ lenses;

a plastic lens that compensates for aberrations; and

a diffraction lens structure that compensates for a lateral chromatic aberration in the main scanning direction, and

00552009-083400

wherein each $f\theta$ lens satisfies conditions:

$$0.0 < f_a/f_d < 0.20; \text{ and}$$

$$0.75 < f_a/f_g < 1.20,$$

where, f_a represents a focal length of the $f\theta$ lens in the main scanning direction;

f_d represents a focal length of said diffraction lens structure in the main scanning direction; and

f_g represents a focal length of said glass lens in the main scanning direction.

2. The tandem type printer according to claim 1, wherein said diffraction lens structure is formed on a refraction surface of said plastic lens in each $f\theta$ lens.

3. An $f\theta$ lenses for a laser beam printer, comprising:
a glass lens that provides substantially all the power, in a main scanning direction, of said $f\theta$ lens;
a plastic lens that compensates for aberrations; and
a diffraction lens structure that compensates for a lateral chromatic aberration in the main scanning direction,

wherein each $f\theta$ lens satisfies conditions:

$$0.0 < f_a/f_d < 0.20; \text{ and}$$

$$0.75 < f_a/f_g < 1.20,$$

where, f_a represents a focal length of the $f\theta$ lens in the main scanning direction;

fd represents a focal length of said diffraction lens structure in the main scanning direction; and

fg represents a focal length of said glass lens in the main scanning direction.

4. The $f\theta$ lens according to claim 3, wherein said diffraction lens structure is formed on a refraction surface of said plastic lens.

007230-20025500